Public Health 101 Series

Introduction to Public Health

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Course Topics

Introduction to Public Health

1. Public Health Definition
2. History of Public Health
3. A Public Health Approach
4. Core Functions and Essential Services of Public Health
5. Stakeholder Roles in Public Health
6. Determining and Influencing the Public's Health

Learning Objectives

After this course, you will be able to

- describe the purpose of public health
- define key terms used in public health
- identify prominent events in the history of public health
- recognize the core public health functions and services
- describe the role of different stakeholders in the field of public health
- list some determinants of health
- recognize how individual determinants of health affect population health

Public Health Defined

Photo: IF Fisher and EL Fisk

"The science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals."

—CEA Winslow

Winslow CEA. The untilled field of public health. Mod Med 1920;2:183–91.

The Mission of Public Health

"Fulfilling society's interest in assuring conditions in which people can be healthy."

—National Academy of Medicine (formerly the Institute of Medicine)

"Public health aims to provide maximum benefit for the largest number of people."

—World Health Organization

Sanitation and Environmental Health

500 BCE

Greeks and Romans practice community sanitation measures

1840s

The Public Health Act of 1848 was established in the United Kingdom

1970

The Environmental Protection Agency was founded

Pandemics

Influenza

500 million infected worldwide in 1918

Polio

Vaccine introduced in 1955; eradication initiative launched in 1988

HIV

34 million living with HIV worldwide; 20% decline in new infections since 2001

Preparedness for Disaster Response

Biologic Warfare

Plague used as a weapon of war during the Siege of Kaffa

September 2001

Public health surveillance conducted after the 9/11 attacks

Hurricane Katrina

Emergency services, public health surveillance, and disease treatment provided

Prevention Through Policy

Book of Leviticus

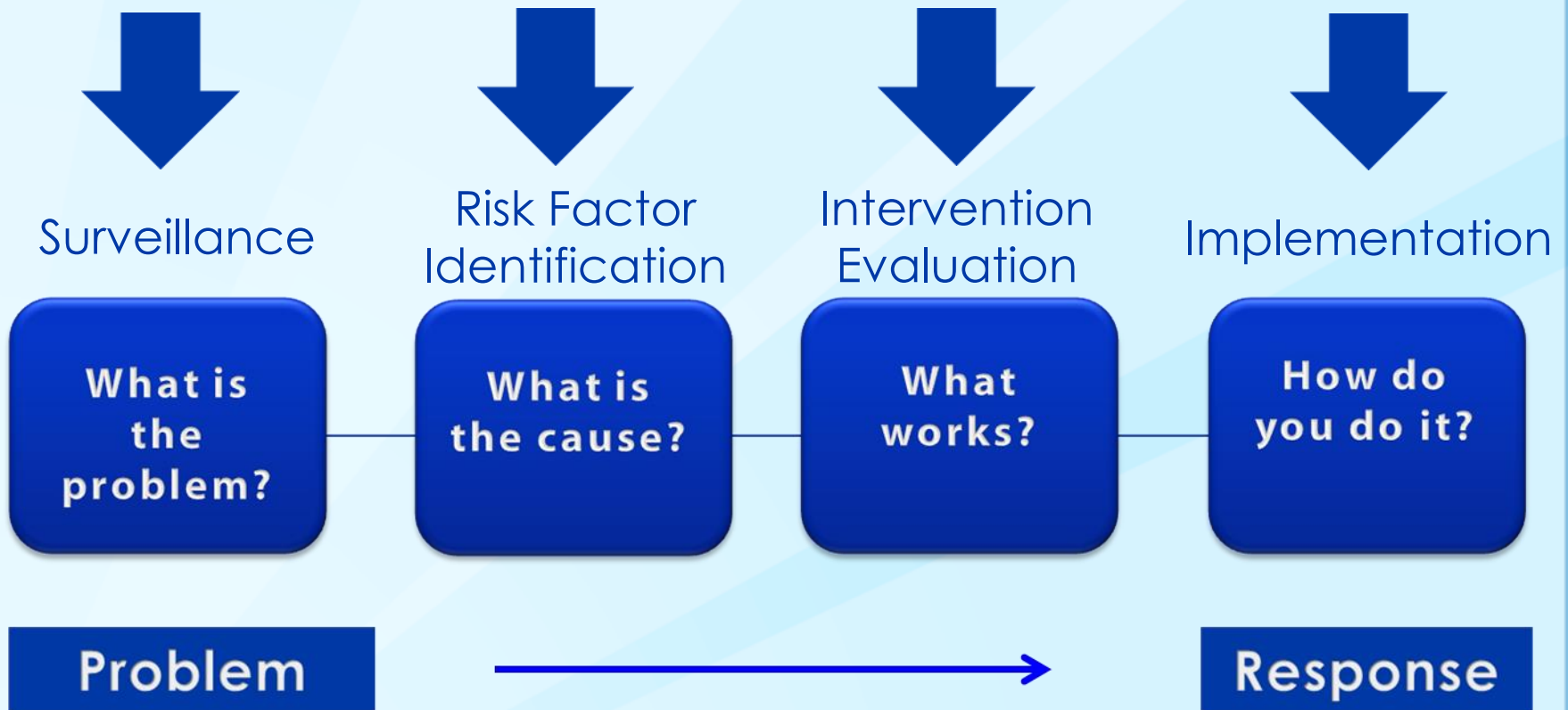The world's first written health code

Tobacco Laws

Laws banning smoking in public places

Obesity

Food labeling and promotion of physical activity

A Public Health Approach

Surveillance

Risk Factor
Identification

Intervention
Evaluation

Implementation

What is the problem?

What is the cause?

What works?

How do you do it?

Problem

Response

Public Health Core Sciences
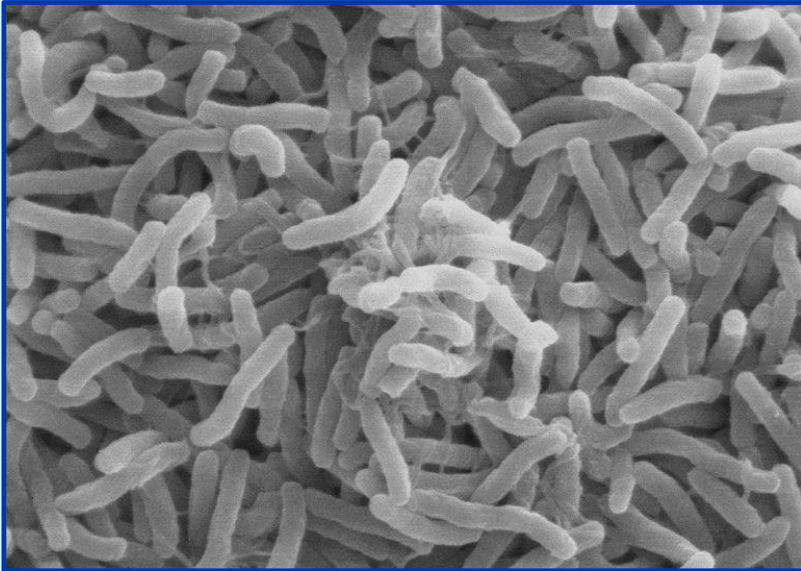
Cholera — A Public Health Approach

Photo: TJ Kirn, MJ Lafferty, CMP Sandoe, and R Taylor, Dartmouth Medical School

Cholera, a fatal intestinal disease, was rampant during the early 1800s in London, causing death to tens of thousands of people in the area. Cholera was commonly thought to be caused by bad air from rotting organic matter.

John Snow, Physician

Photo: London School of Hygiene
and Tropical Medicine

John Snow is best known for his work tracing the source of the cholera outbreak and is considered the father of modern epidemiology.

Epidemiology — What is the Problem?

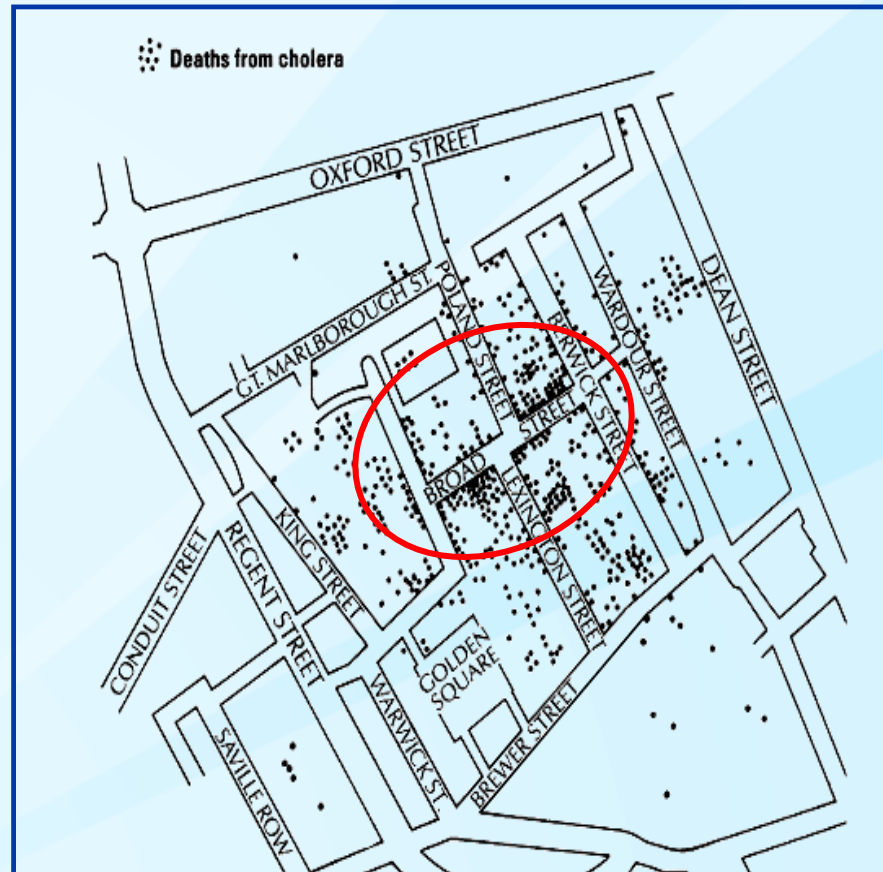## Cluster of Cholera Cases, London — 1854

Image: The Geographical Journal

Risk Factor Identification — What Is the Cause?

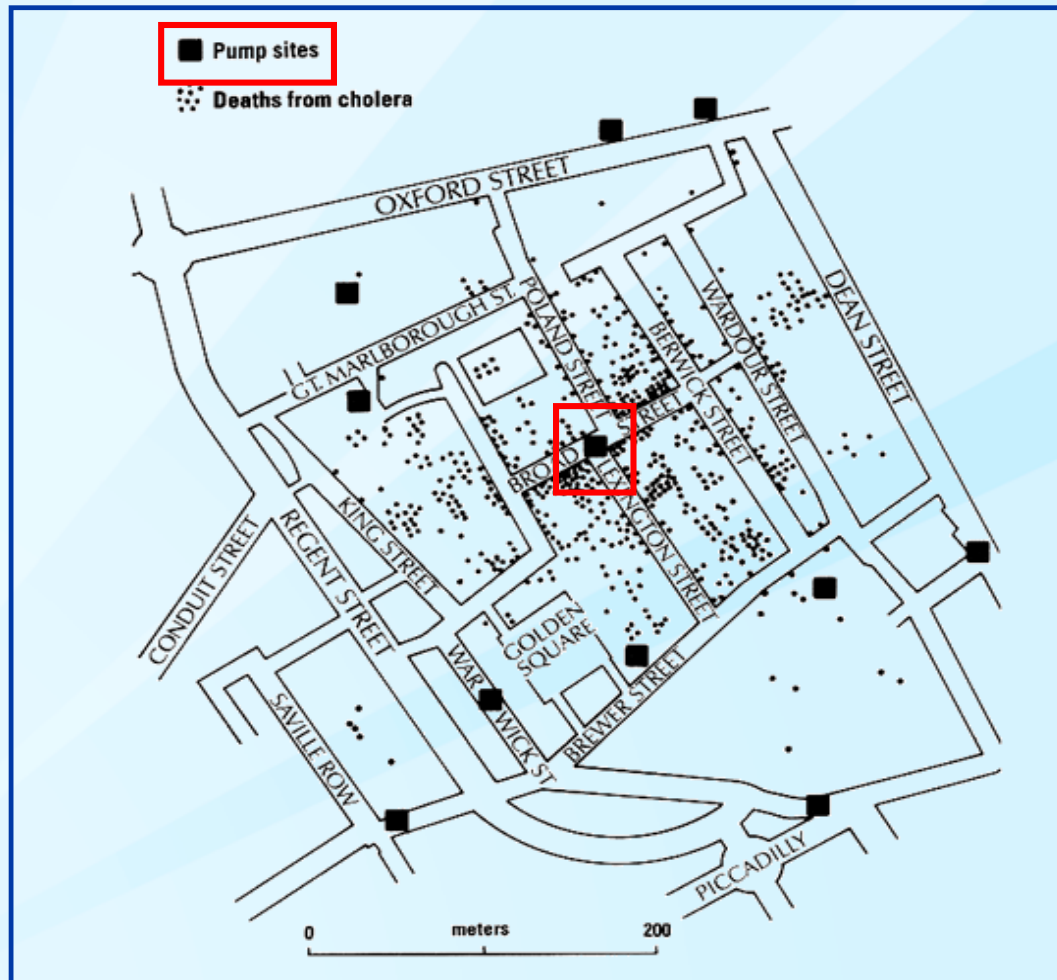## Cluster of Cholera Cases and Pump Site Locations

Image: The Geographical Journal

Intervention Evaluation — What Works?

Through continuous research, Snow understood what interventions were required to

- stop exposure to the contaminated water supply on a larger scale, and

- stop exposure to the entire supply of contaminated water in the area

Implementation — How Do You Do It?

Photo: Justin Cormack

John Snow's research convinced the British government that the source of cholera was water contaminated with sewage

Three Core Functions of Public Health

Assessment → Systematically collect, analyze, and make available information on healthy communities

Policy Development → Promote the use of a scientific knowledge base in policy and decision making

Assurance → Ensure provision of services to those in need

Institute of Medicine. The future of public health. Washington, DC: National Academies Press; 1988.

Core Functions at Government Levels

	Assessment	Policy Development	Assurance
Federal	National tobacco public health surveillance	Smoking ban on commercial flights	Federal grants for antismoking research
State	Monitor state tobacco use	Increase tobacco tax	Funding for campaign through Proposition 99
Local	Report on local tobacco use	County laws prohibiting smoking in bars	Resources to help smokers quit in multiple languages

Ten Essential Public Health Services

1. Monitor Health
2. Diagnose and Investigate
3. Inform, Educate, Empower
4. Mobilize Community Partnership
5. Develop Policies
6. Enforce Laws
7. Link to/Provide Care
8. Assure a Competent Workforce
9. Evaluate
10. Research

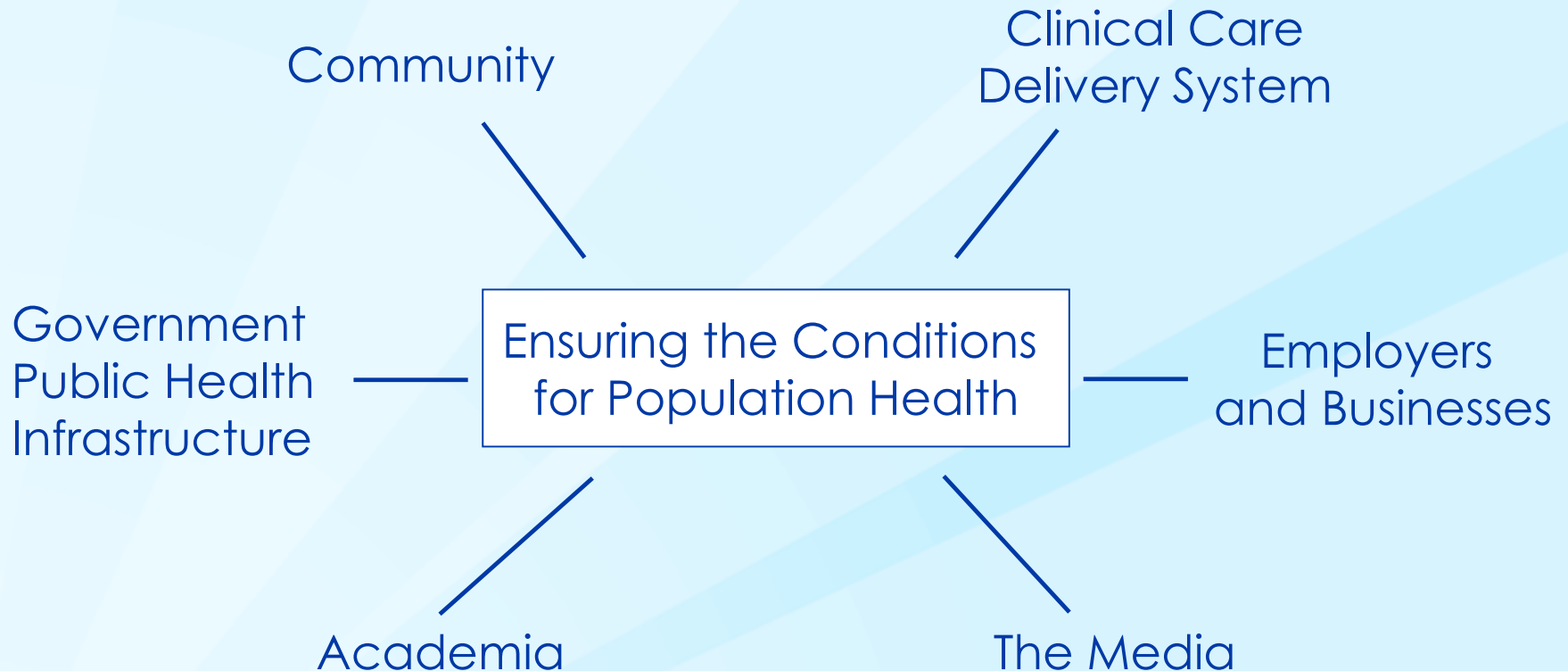# MO Foundational Public Health Services Model

Partners in the Public Health System

Community

Clinical Care
Delivery System

Government
Public Health
Infrastructure

Ensuring the Conditions
for Population Health

Employers
and Businesses

Academia

The Media

Nongovernmental Organization Examples

| Organization Type	Example
Professional membership organizations	American Public Health Association
Associations related to a specific health concern	American Cancer Society
Organizations of citizens focused on health concerns	Americans for Nonsmokers Rights
Foundations that support health projects and influence public policy development	Bill and Melinda Gates Foundation

Health Care as a Partner in Public Health

| Public Health	Health Care
Population focus	Individual patient focus
Public health ethic	Personal service ethic
Prevention or public health emphasis	Diagnosis and treatment emphasis
Joint laboratory and field involvement	Joint laboratory and patient involvement
Clinical sciences peripheral to professional training	Clinical sciences essential to professional training
Public sector basis	Private sector basis

Other Partners in Public Health
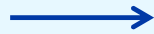
Media →
- Vehicle for public discourse
- Health education and promotion
- Health communication
- Social media as catalyst
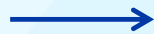
Employers and Businesses →
- Employer-sponsored health insurance programs
- Wellness initiatives and benefits
- Healthy workplaces and communities

Government Agencies →
- City planning
- Education
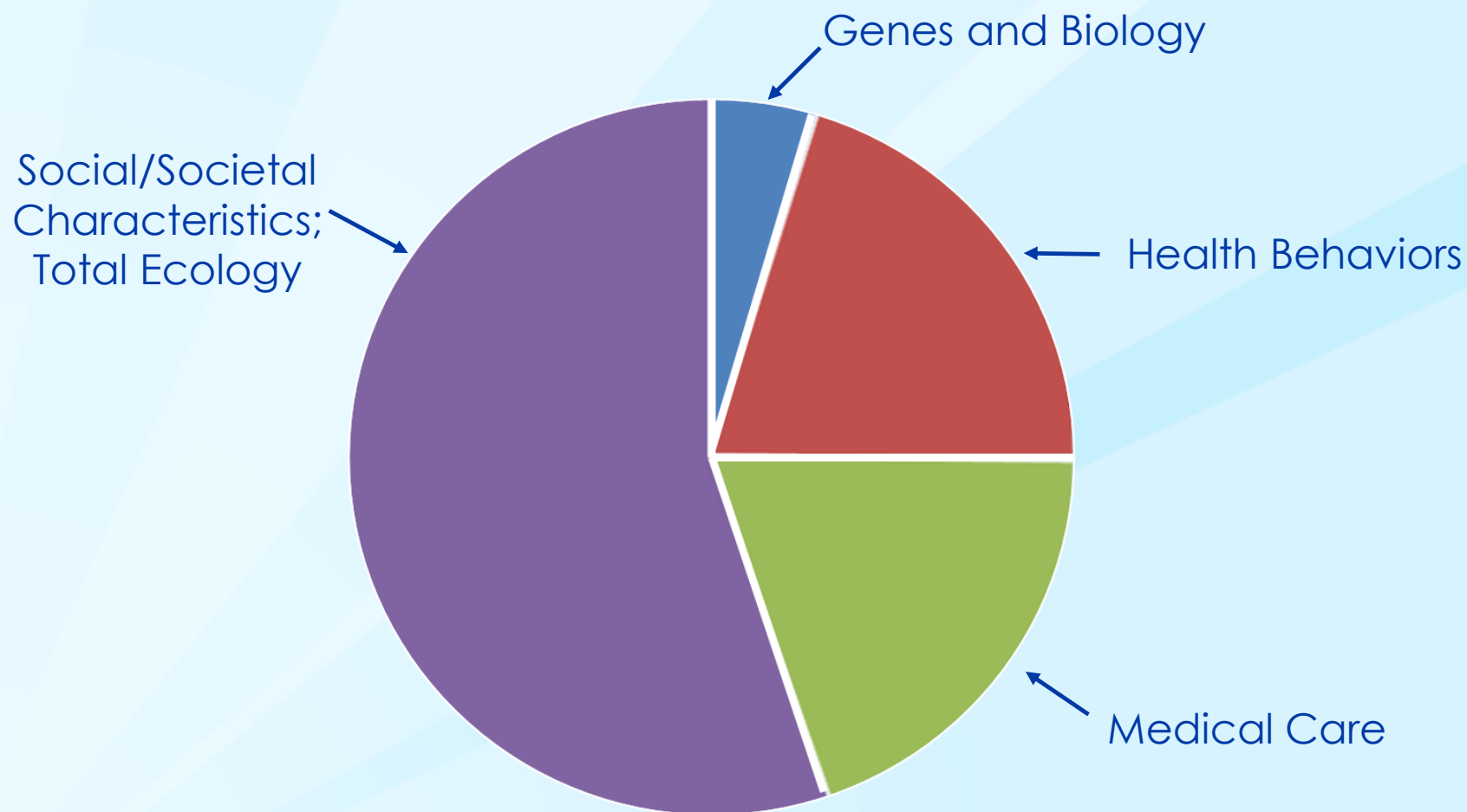- Health in all policies

Academia →
- Education
- Training
- Research
- Public Service

Health Determinants

- Genes and biology
- Health behaviors
- Social or societal characteristics
- Health services or medical care

What Determines the Health of a Population?

Genes and Biology

Health Behaviors

Medical Care

Social/Societal Characteristics; Total Ecology

Health Impact Pyramid

Frieden TR. Framework for public health action: the health impact pyramid. Am J Public Health 2010;100:590–5.

Health Impact Pyramid

Increasing public health impact

Increasing individual effort needed

Tobacco warning labels; promote quitting	Counseling and Education
Treatment of heart disease	Medical Care
Vaccinations; cholesterol screening	Preventive Medicine
Seatbelt laws, smoking restrictions	Making Healthy Decisions the Default
Poverty reduction, education	Socioeconomic Factors

Frieden TR. Framework for public health action: the health impact pyramid. Am J Public Health 2010;100:590–5.

Public Health Core Sciences

Course Summary

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QUESTIONS?

Resources and Additional Reading

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Resources and Additional Reading

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- UNAIDS. UNAIDS World AIDS Day Report, 2012. http://www.unaids.org/en/media/unaids/contentassets/ documents/epidemiology/2012/gr2012/JC2434_WorldAIDSday_results_en.pdf.
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